Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A switching power amplifier for connection to a split voice coil of a speaker, the split voice coil having a first coil and a second coil located in a magnetic field, the first coil and the second coil being wired such that current can be provided to one coil without providing current to the other coil, the power amplifier comprising:

a) a first branch for providing a first audio current to the first coil;

b) a second branch for providing a second audio current to the second coil, wherein the first audio current differs from the second audio current, and

c) a transformer for transferring energy between the first branch and the second branch such that both the first audio current and the second audio current constructively contribute to a force provided to the voice coil.

2. (Original) The switching power amplifier as defined in claim 1 wherein:

the first branch comprises a first switching element for controlling a first current in the first branch;

the second branch comprises a second switching element for controlling a second current in the second branch, wherein

the first current and the second current have a selected high frequency period,

the first audio current is the average of the first current over the high frequency period, and

the second audio current is the average of the second current over the high frequency period.

3. (Original) The switching power amplifier as defined in claim 2 wherein the transformer comprises a first winding in the first branch and a second winding in the second branch, the first winding having a first terminal for receiving current flowing from the first branch and the second winding having a second terminal for receiving current flowing from the second branch, the first winding in the first branch and the second winding in the second branch being oriented such that

the first terminal and the second terminal are of opposite polarity.

4. (Original) The switching power amplifier as defined in claim 2 wherein the transformer is one of a high frequency transformer and an impulse transformer.

5. (Original) The switching power amplifier as defined in claim 2 further comprising

a first filtering capacitor for filtering high frequency components from the first current, the first filtering capacitor being connected to the first branch; and,

a second filtering capacitor for filtering high frequency fluctuations from the second current, the second filtering capacitor being connected to the second branch.

6. (Original) The switching power amplifier as defined in claim 2 wherein

the first audio current is provided concurrently with the second audio current, and

the first current and the second current are alternately supplied to the first branch and the second branch respectively such that the second current is interrupted when the first current is supplied to the first branch, and the first current is interrupted when the second current is supplied to the second branch.

7. (Original) The switching power amplifier as defined in claim 6 further comprising switching means for controlling

(i) the first switching element to terminate the first current at a variable first threshold magnitude at the end of a first time interval in each high frequency period,

(ii) the second switching element to terminate the second current at a variable second current termination magnitude at the end of a second time interval in each high frequency period; wherein

the transformer is a substantially 1:1 transformer, the first winding having a first terminal connected to the first switching element and the second winding having a second terminal connected to the second switching element, the second terminal being opposite in polarity to the first terminal such that the transformer is operable to transfer energy

from the first branch to the second branch during of the first interval to commence the second current at the associated first threshold magnitude, and

from the second branch to the first branch during the second interval to commence the first current at the associated second threshold magnitude.

8. (Original) The switching power amplifier as defined in claim 6 wherein the switching means is operable to control the variable first threshold magnitude and the variable second threshold magnitude from high frequency period to high frequency period to control the first audio current and the second audio current.

9. (Original) The switching power amplifier as defined in claim 2 further comprising

a power supply connection means for providing power to the first coil and the second coil; and,

a signal input branch for receiving an input signal providing audio information to the speaker; and

at least one signal circuit for dividing the input signal to provide the first signal and the second signal.

10. (Original) A method of providing an audio current comprising a first audio current and a second audio current to a split voice coil speaker having a first coil and a second coil located in a magnetic field, the first coil and the second coil being wired such that current can be provided to one coil without providing current to the other coil, the method comprising:

a) providing the first audio current to a first branch connected to the first coil;

b) providing the second audio current to a second branch connected to the second coil, wherein the first audio current differs from the second audio current;

c) orienting the first audio current in the first coil and the second audio current in the second coil such that both the first audio current and the second audio current constructively contribute to a force provided to the voice coil.

11. (Original) The method as defined in claim 10 wherein

step (a) comprises providing a first current to the first branch;

step (b) comprises providing a second current to the second branch;

the first current and the second current have a selected high frequency period,

the first audio current is the average of the first current over the high frequency period, and

the second audio current is the average of the second current over the high frequency period.

12. (Original) The method as defined in claim 11 further comprising transferring energy

between the first branch and the second branch to make both the first current and the second current bi-directional.

13. (Original) The method as defined in claim 12 wherein the step of transferring energy between the first branch and the second branch is performed by a transformer having a first winding in the first branch and a second winding in the second branch.

14. (Original) The method as defined in claim 13 wherein the transformer is one of a high frequency transformer and an impulse transformer.

15. (Original) The method as defined in claim 12 further comprising

filtering high frequency components from the first current to provide the first audio current; and,

filtering high frequency components from the second current to provide the second audio current.

16. (Original) The method as defined in claim 12 wherein

the first audio current is provided concurrently with the second audio current, and

the first current and the second current are alternately supplied to the first branch and the second branch respectively such that the second current is interrupted when the first current is supplied to the first branch, and the first current is interrupted when the second current is supplied to the second branch.

17. (Original) The method as defined in claim 16 wherein

the first branch comprises a first switching element for controlling a first current; and,

the second branch comprises a second switching element for controlling a second current.

18. (Original) The method as defined in claim 17 further comprising

controlling the first switching element to terminate the first current at a variable first threshold magnitude at the end of a first time interval in each high frequency period;

controlling the second switching element to terminate the second current at a variable second current termination magnitude at the end of a second time interval in each high frequency period;

transferring energy from the first branch to the second branch during the first interval to commence the second current at the associated first threshold magnitude; and,

transferring energy from the second branch to the first branch during the second interval to commence the first current at the associated second threshold magnitude.

19. (Original) The method as defined in claim 18 further comprising controlling the variable first threshold magnitude and the variable second threshold magnitude from high frequency period to high frequency period to control the first audio current and the second audio current.

20. (Original) The method as defined in claim 11 further comprising dividing an input signal to provide the first signal and the second signal.

21. (Original) The method as defined in claim 11 wherein the first current and the second current are selected to be substantially inaudible when provided to the first coil and the second coil to impede sound distortion.

22. (Original) A speaker comprising:

a split voice coil having a first coil and a second coil located in a magnetic field, the first coil and the second coil being wired such that current can be provided to one coil without providing current to the other coil, and,

a power amplifier comprising

a first branch for providing a first audio current to the first coil;

a second branch for providing a second audio current to the second coil, wherein the first audio current differs from the second audio current, and

a transformer for transferring energy between the first branch and the second branch such that both the first audio current and the second audio current constructively contribute to a force provided to the voice coil.

23. (Original) The speaker as defined in claim 22 wherein:

the first branch comprises a first switching element for controlling a first current in the first branch;

the second branch comprises a second switching element for controlling a second current in the second branch, wherein

the first current and the second current have a selected high frequency period, the first audio current is the average of the first current over the high frequency period, and

the second audio current is the average of the second current over the high frequency period.

24. (Original) The speaker as defined in claim 23 wherein
the transformer comprises a first winding in the first branch and a second winding in the second branch, the first winding having a first terminal for receiving current flowing from the first branch and the second winding having a second terminal for receiving current flowing from the second branch, the first winding in the first branch and the second winding in the second branch being oriented such that the first terminal and the second terminal are of opposite polarity.

25. (Original) The speaker as defined in claim 23 wherein the transformer is one of a high frequency transformer and an impulse transformer.

26. (Original) The speaker as defined in claim 23 wherein the power amplifier further comprises

a first filtering capacitor for filtering high frequency components from the first current, the first filtering capacitor being connected to the first branch; and,

a second filtering capacitor for filtering high frequency components from the second current, the second filtering capacitor being connected to the second branch.

27. (Original) The speaker as defined in claim 23 wherein

the first audio current is provided concurrently with the second audio current, and

the first current and the second current are alternately supplied to the first branch and the second branch respectively such that the second current is interrupted when the first current is supplied to the first branch, and the first current is interrupted when the second current is supplied to the second branch.

28. (Original) The speaker as defined in claim 27 wherein the power amplifier further comprises switching means for controlling

(i) the first switching element to terminate the first current at a variable first threshold magnitude at the end of a first time interval in each high frequency period,

(ii) the second switching element to terminate the second current at a variable second current termination magnitude at the end of a second time interval in each high frequency period; wherein

the transformer is a substantially 1:1 transformer, the first winding having a first terminal connected to the first switching element and the second winding having a second terminal connected to the second switching element, the second terminal being opposite in polarity to the first terminal such that the transformer is operable to transfer energy

from the first branch to the second branch during of the first interval to commence the second current at the associated first threshold magnitude, and

from the second branch to the first branch during the second interval to commence the first current at the associated second threshold magnitude.

29. (Original) The speaker as defined in claim 27 wherein the switching means is operable to control the variable first threshold magnitude and the variable second threshold magnitude from high frequency period to high frequency period to control the first audio current and the second audio current.

30. (Original) The speaker as defined in claim 22 further comprising

a power supply connection means for providing power to the first coil and the second coil; and,

a signal input branch for receiving an input signal for providing audio information to the speaker; and

at least one signal circuit for dividing the input signal to provide the first signal and the second signal.